# MBTA Title VI Program

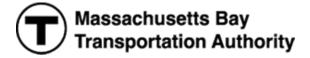
### DISPARATE IMPACT AND DISPROPORTIONATE BURDEN ANALYSIS

TITLE: Youth Pass Program Expansion

TYPE: Fare

DATE COMPLETED: January 17, 2018

DATE APPROVED BY FMCB:



### TECHNICAL MEMORANDUM

**DATE:** January 17, 2018

TO: Luis Ramírez, General Manager

CC: John Lozada, Manager of Federal Programs, Office of Diversity and

Civil Rights and Marie Breen, General Counsel

FROM: Laurel Paget-Seekins, Ph.D., Director of Strategic Initiatives, MBTA

Office of Performance Management and Innovations

**RE:** Youth Pass Program Expansion: Title VI Fare Equity Analysis

This memorandum presents the results of the Title VI fare equity analysis, which is required by the Federal Transit Administration (FTA). The Central Transportation Planning Staff (CTPS) conducted the analysis for the Massachusetts Bay Transportation Authority's (MBTA) Youth Pass program expansion, and applied the MBTA's Disparate Impact and Disproportionate Burden Policy to the results. Results of the analysis show that the fare product categories introduced by the Youth Pass program expansion, including the introduction of the ability to purchase single-ride bus and subway trips at a reduced price and the expansion of the program to qualifying people up to age 25, did not result in disparate impacts on minority populations or disproportionate burdens on low-income populations.

This memorandum reviews the details of the program expansion, the requirements of a fare equity analysis, and the detailed results of the analysis, which the MBTA has reviewed and adopted.

#### 1 INTRODUCTION

### 1.1 Description of the Youth Pass Program Expansion

The MBTA offers a Youth Pass in conjunction with municipal partners, who are responsible for administering the program. The Youth Pass can be used to purchase a reduced-price monthly LinkPass at the reduced fare rate (currently \$30) that is valid on the MBTA's local bus and rapid-transit system. At the beginning of February 2017, following the pilot, the MBTA began its official and expanded Youth Pass program with the goal of "providing affordable transit access for low-income young people." 1,2

This program expansion

 provides Youth Pass access to individuals ages 22 through 25 who live in participating municipalities and meet needs-based criteria by

<sup>&</sup>lt;sup>1</sup> https://www.mbta.com/news/2493.

<sup>&</sup>lt;sup>2</sup> The initial pilot of the program was available for youth up to age 22.

- demonstrating enrollment in an eligible job training program; a state or federal public benefit program (such as SNAP, WIC, TAFDC, public housing or other assistance programs); or MassHealth<sup>3</sup>; and
- replaces the seven-day Youth Pass for all program participants, including those in the initial program, with the ability to purchase single-ride bus and subway trips at a reduced price using the Youth Pass.<sup>4</sup>

On September 16, 2016, (before the February 1, 2017 start date of the Youth Pass Program expansion) the MBTA asked FTA for a full year to conduct the Title VI equity analysis. This request was based on the need to have more time to collect data on the usage. The request was granted by FTA. The analysis reported in this document is based on Youth Pass usage data collected between February 1, 2017 and July 31, 2017.

### 1.2 Federal Requirements for a Fare Equity Analysis

FTA Circular 4702.1B provides guidelines and requirements for implementing US Department of Transportation regulations pertaining to Title VI of the Civil Rights Act of 1964 (49 CFR 21). The circular requires the MBTA to conduct a fare equity analysis for any fare change that lasts longer than six months to evaluate whether the fare change would have a discriminatory impact based on race, color, or national origin, and whether low-income populations would bear disproportionate burdens or non-low-income populations would receive disproportionate benefits because of the changes. The circular also requires 1) briefing the MBTA Fiscal Management and Control Board on the fare change and the equity impacts of the change, and 2) documenting that the board considered and approved the fare equity analysis.

The FTA-required fare equity analysis of the Youth Pass expansion is presented below.

### 1.3 Summary of MBTA Disparate Impact and Disproportionate Burden Policy for Fare Changes

The MBTA's Disparate Impact and Disproportionate Burden Policy<sup>5</sup> establishes thresholds for evaluating the equity impacts and the distribution of benefits and burdens caused by any fare change or major service change. For fare changes,

<sup>&</sup>lt;sup>3</sup> Here is a detailed list of MBTA Youth Pass Eligibility Criteria: https://d3044s2alrsxog.cloudfront.net/sites/default/files/2017-11/youth-pass-program-eligibility-2018-updated-nov-20-2017.pdf

<sup>&</sup>lt;sup>4</sup> Following the conclusion of the Youth Pass pilot program, the MBTA decided not to continue to offer the seven- day Youth Pass in the full Youth Pass program.

<sup>&</sup>lt;sup>5</sup> https://www.mbta.com/policies/fairness

the policy requires that the MBTA compare the percentage change in the average fare for minority and all riders, and the percentage change in the average fare for low-income and all riders. For fare type changes across all transportation modes, the policy requires the MBTA to assess whether minority and low-income riders would disproportionately use the affected fare type or payment media than overall riders. For fare type changes across all transportation modes, the policy requires the MBTA to assess whether minority and low-income riders disproportionately would more likely use the affected fare type or payment media than overall riders. The MBTA's threshold for determining when fare changes may result in disparate impacts or disproportionate burdens on minority or low-income populations is ten percent.

### 2 FARE EQUITY ANALYSIS

CTPS conducted the fare equity analysis in three parts, which address the different aspects of the fare change:

- Reviewed fare usage by fare payment type (Section 2.1)
- Compared demographics of Youth Pass Program participants to the demographics of the participating municipalities (Section 2.2)
- Compared the change in the average fares between the relevant rider classifications (Section 2.3)

In Sections 2.2 and 2.3 of this memorandum, we review the impacts of the changes to the expanded Youth Pass program population and to the original Youth Pass program population.

### 2.1 Proposed Fare Changes

Table 1 presents a comparison of the price of the monthly Youth Pass with the price of other fare products available to or targeted to this age group; which include the monthly LinkPass, the discounted monthly Student Pass, and an additional fare product for college and university students, the Semester Pass. Table 2 shows a comparison of the price of the reduced fare single-ride trips with the price of other fare products available to or targeted at this age group.

TABLE 1
Prices of Passes Available to
Youth Pass Program Participants

Pass Product	Cost	Discount
Monthly LinkPass	\$84.50	0%
College Semester Pass	\$75.21	11.0%

Seven-Day Pass	\$21.25	0%
Monthly Youth Pass	\$30.00	64.5%

Source MBTA: www.mbta.com/fares/.

Note: Discounts are based on the Monthly LinkPass cost.

TABLE 2
Prices of Single-ride Fares Available to
Youth Pass Program Participants

-			
Pass Product	Full Cost	Youth Cost	Discount
Local Bus	\$1.70	\$0.85	50.0%
Rapid Transit	\$2.25	\$1.10	51.1%
Inner Express Bus	\$4.00	\$2.50	37.5%
Outer Express Bus	\$5.25	\$3.50	33.3%

Source: MBTA, www.mbta.com/fares/.

Note: the MBTA also offers step-up transfers where the rider pays the difference between the more expensive and the less expensive transportation mode. These carry over to the discount program as well.

In circular FTA C 4702.1B, the FTA provides examples of the tables that are required for presenting the results of a fare equity analysis. These tables depict, for existing and proposed fare media, the existing cost, the proposed cost, the change in fare (absolute and percentage), and the number and percentage of minority, low-income, and all riders using each fare type. Table 3 presents the fare change and includes annual usage by numbers and percentages of minority, low-income, and all riders, following the FTA examples. The FTA also requires a graphic display of the fare payment distributions by group—low-income, minority, and all riders—which is shown in Figure 1 on page 6. These fare products include the products from which Youth Pass participants most likely would switch.

TABLE 3
Comparison of Usage by Eligible Fare Types

Compari	son of Us							
		1	Usage by ( Total Trips sands of T		Annual Usage by Group: Percent of Group Total (Percentage)			
For Bound Torr	SFY	•	Low-	All	•	Low-	All	
Fare-Payment Type	2017	Minority	Income	Riders	Minority	Income	Riders	
Youth Pass (NEW)								
Monthly Pass (Rapid Transit and Local Bus)	\$30.00							
Reduced Single Ride Fares	Various							
Local Bus								
Local Bus Pass	\$55.00	3,082	2,402	5,216	3.2	2.9	2.2	
Local Bus (Adult)	\$1.70	9,162	7,880	17,432	9.5	9.4	7.5	
Local Bus (Student)	\$0.85	1,315	1,276	1,711	1.4	1.5	0.7	
Local Bus (CharlieTicket)	\$2.00	632	627	1,024	0.7	0.7	0.4	
Local Bus (Cash)	\$2.00	714	724	1,241	0.7	0.9	0.5	
Express Bus								
Inner Express Pass	\$128.00	663	367	2,268	0.7	0.4	1.0	
Inner Express (Adult)	\$4.00	236	210	564	0.2	0.2	0.2	
Inner Express (Student)	\$2.50	21	32	34	0.0	0.0	0.0	
Inner Express (CharlieTicket)	\$5.00	7	4	26	0.0	0.0	0.0	
Inner Express (Cash)	\$5.00	27	35	52	0.0	0.0	0.0	
Outer Express Pass	\$168.00	124	37	512	0.1	0.0	0.2	
Outer Express (Adult)	\$5.25	26	13	109	0.0	0.0	0.0	
Outer Express (Student)	\$3.50	NR	NR	1	_	_	0.0	
Outer Express (CharlieTicket)	\$7.00	0	NR	4	0.0	_	0.0	
Outer Express (Cash)	\$7.00	4	0	5	0.0	0.0	0.0	
Bus + Rapid Transit								
Bus + Rapid Transit (Adult)	\$2.25	3,355	3,008	8,129	3.5	3.6	3.5	
Bus + Rapid Transit (Student)	\$1.10	299	278	408	0.3	0.3	0.2	
Bus + Rapid Transit (CharlieTicket)	\$4.75	7	7	12	0.0	0.0	0.0	
Rapid Transit								
LinkPass	\$84.50	30,775	21,246	93,563	32.0	25.3	40.1	
Student Pass	\$30.00	10,116	9,163	15,295	10.4	10.8	6.5	
1-Day Pass	\$12.00	623	463	748	0.6	0.6	0.3	
7-Day Pass	\$21.25	20,153	21,282	36,411	20.9	25.3	15.6	
Rapid Transit (Adult)	\$2.25	10,210	10,041	37,311	10.6	11.9	16.0	
Rapid Transit (Student)	\$1.10	741	604	1,150	0.8	0.7	0.5	
Rapid Transit (CharlieTicket)	\$2.75	4,711	4,694	12,558	4.9	5.6	5.4	
Rapid Transit (Cash)	\$2.75	47,700	138	231	0.0	0.2	0.1	

Rapid Transit (Cash) \$2.75 47,700 138 231 0.0 0.2 0. Source: State Fiscal Year (SFY) 2015 FERRET. 2008–2009 MBTA Systemwide Passenger Survey. Note: The reduced single-ride fare prices are those of the "Student" single-ride fares. Riders who are classified as minority and low-income are counted in both the "minority" and the "low-income" columns.

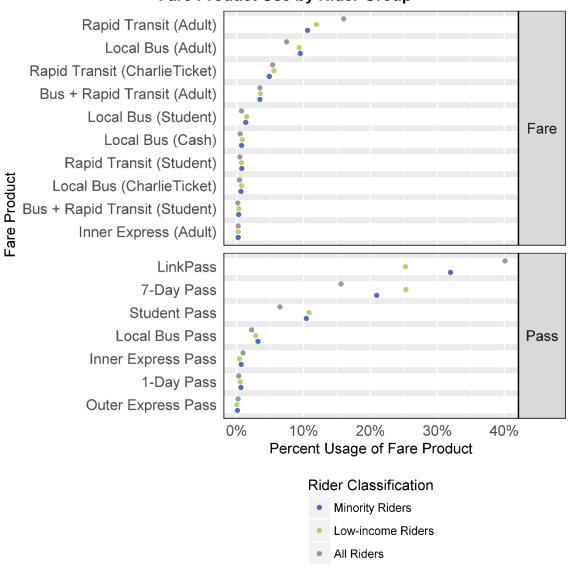


FIGURE 1
Fare Product Use by Rider Group

Source: SFY 2015 FERRET. 2008–2009 MBTA Systemwide Passenger Survey. Note: Only fare products used by at least 0.01percent of the riders are shown.

## 2.2 Disparate and Disproportionate Benefit Analysis: Youth Pass Program Participation

The Youth Pass benefits eligible users because it provides access to the bus and rapid transit system at a cost significantly lower than that of similar pass products. To calculate the number and proportion of minority and low-income youth among Youth Pass participants, CTPS used demographic information—including minority and low-income status—that participants provided in the Youth

Pass program participant survey.<sup>6</sup> CTPS then used American Community Survey (ACS) 2011–2015 data to estimate the demographics of similarly aged populations in the municipalities participating in the program (Boston, Cambridge, Chelsea, Lynn, Malden, and Quincy).<sup>7</sup> Because the ACS age groupings do not exactly match the age breaks of the program's eligible populations, we provide several estimates of the demographics in the participating municipalities based on the age ranges available from the census tables.

#### Youth Pass Program Participation for 22-25 Year Olds

Table 4 shows the percentage of minority and low-income youth among the Youth Pass program expansion participants and among the population of eligible youth in partner municipalities. This table serves as the population-based analysis for the expansion of the Youth Pass program to include 22 to 25 year olds.

In Table 4, the values labeled "ACS Minority (20-24)" represent the entire population of minorities in the municipalities; and the values labeled "PUMS Minority and Low-Income (22–25)" represent the low-income *and* minority population. Using Public Use Microdata Samples (PUMS) for the 11 PUM areas (PUMAs) that contain the participating municipalities, we found that the percentage of low-income *and* minority young adults was approximately 65 percent of all low-income individuals.

<sup>&</sup>lt;sup>6</sup> The Youth Pass participant survey was written by MBTA staff and administered by staff at the partner cities. The participants filled out the survey when they enrolled in the program, after being approved by the city partners. More than 1,800 participants completed the survey. Approximately 25 percent of the participants were between 22 and 25 years old.

<sup>&</sup>lt;sup>7</sup> After the analysis period reported here, the city of Revere began participating in the Youth Pass program. For the demographics important to this fare equity analysis, Revere is not substantially different from the combined demographics of the other municipalities.

TABLE 4
Minority and Low-Income Characteristics of Youth Pass Program
Participants and Eligible Youth in Participating Municipalities

(Population between the Ages of 22 and 25)

Population (Age)	Number	Percent	Population (Age)	Number	Percent
Minority Participants	397	88%	Low Income Participants	281	63%
Nonminority Participants	42	9%	Non-Low-Inc. Participants	51	11%
No Response	10	2%	No Response	117	26%
Total Participants	449	100%	Total Participants	449	100%
ACS Minority (20-24)	61,959	50%	ACS Low-Income (18-24)	63,264	54%
ACS Total (20-24)	123,319	_	ACS Total (18-24)	117,548	_
PUMS Minority and Low-Income (22–25)	_	65%	PUMS Low-Income (22–25)		27%

Data sources: MBTA Youth Pass Participant Survey.

Minority Status: 2011–2015 ACS: Table B01001 (Sex by Age) and B01001H (Sex by Age, White Alone, Not Hispanic or Latino),

Income Status: 2011–2015 ACS: Table B17024 (Age by Ratio of Income to Poverty Level in the Past 12 Months).

Public Use Microdata Samples (PUMS): 2011-2015 ACS 5-year PUMS, population and housing unit records. People aged 22 to 25 in PUMAs containing participating municipalities. This data was combined with 2015 Federal Poverty Levels.

The total populations associated with low-income status are based on ACS table B17024 for which the universe is the "population for whom poverty status is determined." The total populations associated with low-income status are based on table B01001 for which the universe is the "total population." This population is generally greater than the population for whom poverty status is determined.

See Appendix A for information about how we transformed the survey responses to values that are relatively comparable to the ACS-based poverty measurement.

### Youth Pass Program Participation for 21 Year-olds and Younger

Table 5 shows the percentage of minority and low-income youth among the original Youth Pass participants and among the population of eligible youth in the partner municipalities. This table serves as the population-based analysis for the introduction of the reduced single-ride fares for the original Youth Pass Program participants.

TABLE 5
Minority and Low-Income Characteristics of Original Youth Pass
Program Participants and Eligible Youth in Participating Municipalities

(Population between the Ages of 12 and 21)

Population (Age)	Number	Percent	Population (Age)	Number	Percent
Minority Participants	1,287	93%	Low Income Participants	836	61%
Nonminority Participants	64	5%	Non-Low-Inc. Participants	140	10%
No Response	29	2%	No Response	404	29%
Total Participants	1,380	100%	Total Participants	1,353	100%
ACS Minority (15-19)	44,588	59%	ACS Low-Income (12–17)	27,429	47%
ACS Total (15-19)	76,073	_	ACS Total (12-17)	58,238	_
ACS Minority (20-24)	61,959	50%	ACS Low-Income (18-24)	63,264	54%
ACS Total (20-24)	123,319	_	ACS Total (18-24)	117,548	_
ACS Minority (15-24)	106,547	53%	ACS Low-Income (12-24)	90,693	<b>52</b> %
ACS Total (15–24)	199,392		ACS Total (12-24)	175,786	<del></del>
PUMS Minority (12–21)	_	66%	PUMS Low-Income (12-21)	_	49%

Data sources: MBTA Youth Pass Participant Survey.

Minority Status: 2011–2015 ACS: Table B01001 (Sex by Age) and B01001H (Sex by Age, White Alone, Not Hispanic or Latino),

Income Status: 2011–2015 ACS: Table B17024 (Age by Ratio of Income to Poverty Level in the Past 12 Months).

PUMS: 2011-2015 ACS 5-year PUMS, population and housing unit records. People aged 12 to 21 in PUMAs containing participating municipalities.

The total populations associated with low-income status are based on table ACS B17024 for which the universe is the "population for whom poverty status is determined." The total populations associated with low-income status are based on ACS table B01001 for which the universe is the "total population." This population is generally greater than the population for whom poverty status is determined.

See Appendix A for information about how we transformed the survey responses to values that are relatively comparable to the ACS-based poverty measurement.

In all cases, the percentage of minority and low-income participants is significantly greater than the percentage of minority and low-income youth living in the constituent municipalities. This indicates that there is no disproportionate benefit to the nonminority population or non-low-income population.

### 2.3 Disparate and Disproportionate Benefit Analysis: Cost per Trip

The MBTA uses the average cost per trip when conducting the disparate impact and disproportionate burden analysis because there is extensive use of multi-trip pass products in the MBTA's system. CTPS used the following data to conduct this analysis:

- Youth Pass trip data: We used the automated fare collection (AFC) data associated with Youth Pass cards used by participants between 22 and 25 years old and 21 years old or younger to determine how many trips Youth Pass program participants took during the analysis period. We also used this dataset to estimate the cost to make those trips.
- AFC data: We used the CTPS Fare Elasticity, Revenue, and Ridership
  Estimation Tool (FERRET) model to process state fiscal year (SFY) 2015
  AFC data to estimate the post-SFY-2017-fare-increase fares by rider
  classification for the bus and rapid transit system combined (excluding
  from the calculation senior fare products and commuter rail/commuter
  boat fare products). We used a "blended average fare," which contains
  pass usage and stored-value usage.
- 2008–2009 MBTA Systemwide Passenger Survey: We used the survey data to estimate fare usage by income and minority status. This data was combined with FERRET output to obtain average fares by rider classification. CTPS is currently processing the data for the MBTA's 2015–2017 systemwide passenger survey. Because the results of that survey are not yet ready for analysis, we chose to use the latest available data source.

### Cost per Trip for 22-25 Year Olds

As shown in Table 6, there is a slightly larger decrease in the per-trip cost for minority participants than for Youth Pass program expansion participants, resulting in a ratio of 1.07 (the change in the average cost per trip for minority participants divided by the change in the average cost per trip for all participants). This ratio of the benefit for minority participants to all participants demonstrates that minority Youth Pass program expansion participants are meeting the policy threshold for fare changes. Therefore, there is no disparate benefit for nonminority participants.

TABLE 6
Disparate Benefit Analysis: Cost per Trip (22–25 Year Olds)

	Cost per Trip before Youth Pass	Cost per Trip with Youth Pass	Absolute Decrease	Percentage Decrease
Minority Participants	\$1.07	\$0.45	-\$0.62	-57.9%
All Participants	\$0.98	\$0.45	-\$0.53	-54.1%
Ratio				1.07
Threshold				0.90
				No Disparate
Result of Analysis				Benefit

Data source: MBTA Origin, Destination, Transfer (ODX) data 2/1/2017–7/31/2017. FERRET SFY 2017 projected rapid transit and bus fares.

Cost per Trip before Youth Pass: Because we did not have pre-Youth Pass usage data for these participants, we could not determine an exact change in cost per trip. We used FERRET, an elasticity-based fare-modeling tool used in SFY 2015 to model fare increases, to estimate existing costs per trip on the rapid transit and bus systems.

Ratio: The ratio of the percentage change in average cost per trip for minority participants to the percentage change in the average cost per trip for all participants.

Threshold: The analysis threshold for fare changes.

While the expansion program intends to offer lower-cost transit fares to meanstested individuals, the rider survey suggests that some participants are not considered low-income as defined by the poverty thresholds we use for equity analyses. This is because the MBTA qualification criteria included participation in a variety of income-based programs that are not necessarily based on the federal poverty level, and education and job training programs that are not based on income. Therefore, we conducted an income-based equity analysis to determine if the expansion program resulted in disproportionate benefits to non-low-income participants. As shown in Table 7, there is a slightly larger decrease in the pertrip cost for low-income participants than for all Youth Pass program expansion participants, resulting in a ratio of 1.02 (the change in the average cost per trip for low-income participants divided by the change in the average cost per trip for all participants). This ratio of the benefit for low-income participants to all participants demonstrates that low-income Youth Pass program expansion participants are meeting the policy threshold for fare changes. Therefore, there is no disproportionate benefit for non-low-income participants.

TABLE 7
Disproportionate Benefit Analysis: Cost per Trip (22–25 Year Olds)

	Cost per	Cost per		_
	Trip before	Trip with	Absolute	Percentage
	Youth Pass	Youth Pass	Decrease	Decrease
Low-Income				
Participants	\$1.00	\$0.45	-\$0.55	-55.0%
All Participants	\$0.98	\$0.45	-\$0.53	-54.1%
Ratio				1.02
Threshold				0.90
				No
				Disproportion
				ate
Result of Analysis				Benefit

Data source: MBTA ODX data 2/1/2017–7/31/2017. FERRET SFY 2017 projected rapid transit and bus fares.

### Cost per Trip for 21 Year-olds and Younger

As shown in Table 8, there is a slightly larger decrease in the per-trip cost for minority participants than for all Youth Pass participants, resulting in a ratio of 1.07 (the change in the average cost per trip for minority participants divided by the change in the average cost per trip for all participants). This ratio of the benefit for minority participants to all participants demonstrates that minority Youth Pass participants are meeting the policy threshold for fare changes. Therefore, there is no disparate benefit for nonminority participants.

TABLE 8
Disparate Benefit Analysis: Cost per Trip (21 Year-olds and Younger)

	Cost per Trip before Youth Pass	Cost per Trip with Youth Pass	Absolute Decrease	Percentage Decrease
Minority Participants	\$1.07	\$0.44	-\$0.63	-58.9%
All Participants	\$0.98	\$0.44	-\$0.54	-55.1%
Ratio				1.07
Threshold				0.90
				No Disparate
Result of Analysis				Benefit

Data source: MBTA ODX data 2/1/2017–7/31/2017. FERRET SFY 2017 projected rapid transit and bus fares.

As shown in Table 9, there is a slightly larger decrease in the per-trip cost for low-income Youth Pass participants than for all participants, resulting in a ratio of 1.02 (the change in the average cost per trip for low-income participants divided by the change in the average cost per trip for all participants). This ratio of the benefit for low-income participants to all participants demonstrates that low-income Youth Pass participants are meeting the policy threshold for fare

changes. Therefore, there is no disproportionate benefit for non-low-income participants.

TABLE 9
Disproportionate Benefit Analysis: Cost per Trip (21 Year-olds and Younger)

	Cost per Trip before Youth Pass	Cost per Trip with Youth Pass	Absolute Decrease	Percentage Decrease
Low-income	<b>#4.00</b>	<b>CO 44</b>	<b>ФО БО</b>	FC 00/
Participants	\$1.00	\$0.44	-\$0.56	-56.0%
All Participants	\$0.98	\$0.44	-\$0.54	-55.1%
Ratio				1.02
Threshold				0.90
				No
				Disproportion
Result of Analysis				ate Benefit

Data source: MBTA ODX data 2/1/2017–7/31/2017. FERRET SFY 2017 projected rapid transit and bus fares.

#### 2.4 Conclusions

Both the expansion of eligibility of the Youth Pass to qualified 22 to 25 year olds and the addition of the ability to purchase reduced-price single ride fares would provide a benefit to eligible users because they provide access to the bus and rapid transit system at a significant discount when compared to similar fare products.

Based on data collected from the Youth Pass participant survey, CTPS found that the percentages of minority youth and low-income youth participating in the program are higher than the percentages of minority youth and low-income youth living in the municipalities participating in the program. This suggests that there is no disparate benefit to nonminority youth in the program, and no disproportionate benefit to non-low-income youth in the program.

When analyzing the average trip cost for minority, low-income, and all program participants, CTPS found that neither the expansion of the program to qualified 22 to 25 year olds nor the addition of reduced-price single ride fares result in disparate benefits to nonminority youth in the program or disproportionate benefits to non-low-income youth in the program.

### APPENDIX INCOME STATUS OF SURVEY RESPONDENTS

The MBTA's Youth Pass Participant Survey income categories and the 2015 Federal Poverty level guidelines do not match perfectly. We used the classification scheme shown in the table below to determine whether we consider a given household size and income level pair "low-income" or not. If a household size and income level pair contained 200 percent of the Federal Poverty Level (FPL), we considered people in that category non-low-income. However, because some people in that category earn less than 200 percent of the FPL and we are classifying them as non-low-income, this approach undercounts the number of low-income participants.

		MBTA Youth Pass Participant Survey Income Categories								
Have hald Oire	0000/ - f EDI	Less than \$14,500	\$14,500 to \$28,999	\$29,000 to \$43,499	\$43,500 to \$57,999	\$58,000 to \$75,999	\$76,000 to \$108,499	\$108,500 to \$151,999	\$152,000 or more	Prefer not to say/NR
Household Size	<b>200% of FPL</b> \$23,540	LI	NLI	NLI	NLI	NLI	NLI	NLI	NLI	NR
2	\$31,860	LI	LI	NLI	NLI	NLI	NLI	NLI	NLI	NR
3	\$40,180	LI	LI	NLI	NLI	NLI	NLI	NLI	NLI	NR
4	\$48,500	LI	LI	LI	NLI	NLI	NLI	NLI	NLI	NR
5	\$56,820	LI	LI	LI	NLI	NLI	NLI	NLI	NLI	NR
6	\$65,140	LI	LI	LI	LI	NLI	NLI	NLI	NLI	NR
7	\$73,460	LI	LI	LI	LI	NLI	NLI	NLI	NLI	NR
8	\$81,780	LI	LI	LI	LI	LI	NLI	NLI	NLI	NR
Unknown	NA	LI	NR	NR	NR	NR	NR	NR	NR	NR

Notes:

**LI** = Low income, **NLI** = Non-low-income, **NR** = No response.